

Evaluation of USDA Soybean Germplasm Adaptability Under Pakistani Conditions for Sustainable Agriculture**Zaheer Ahmed**

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Soybean (*Glycine max* L. Merrill) is an important oil seed crop as well as rich source of protein, nutrients and energy. Soybean has become an important agricultural commodity due to its unique composition, excellent nutritional value, health benefits and necessity in sustainable agriculture. Local production of soybean in Pakistan is negligible and domestic requirement is met through the import of soy seed, oil and soy meal. To increase local soybean production, evaluation of various exotic soybean genotypes for their adaptability under local conditions was performed. This study was conducted in the research area of Department of Plant Breeding and Genetics, University of Agriculture, Faisalabad. One hundred soybean lines were collected from United States Department of Agriculture (USDA). The material was sown along with four local varieties (Ajmeri, Rawal, Malakand, NARC-2) used as a control in an augmented field design. Data were recorded on germination percentage, days taken to germinate, plant population, number of pods plant⁻¹, days taken to maturity, seed yield plant⁻¹ (g), plant height(cm), hundred seed weight (g), number seeds pod⁻¹ harvest index. The recorded data was subjected to analyses of variance to estimate the genetic variability. All genotypes were significantly different from each other for all traits except number of seeds pod⁻¹. Correlation analyses were performed to estimate the relationship among yield and yield contributing traits. Seed yield plant⁻¹ had positive and highly significant correlation with germination percentage, days taken to germinate, days taken to maturity and harvest index. It is concluded that plant height, number of pods plant⁻¹, hundred seed weight and seed yield plant⁻¹ may be used as a selection criteria. This study is significant for the establishment soybean breeding program for sustainable agriculture.